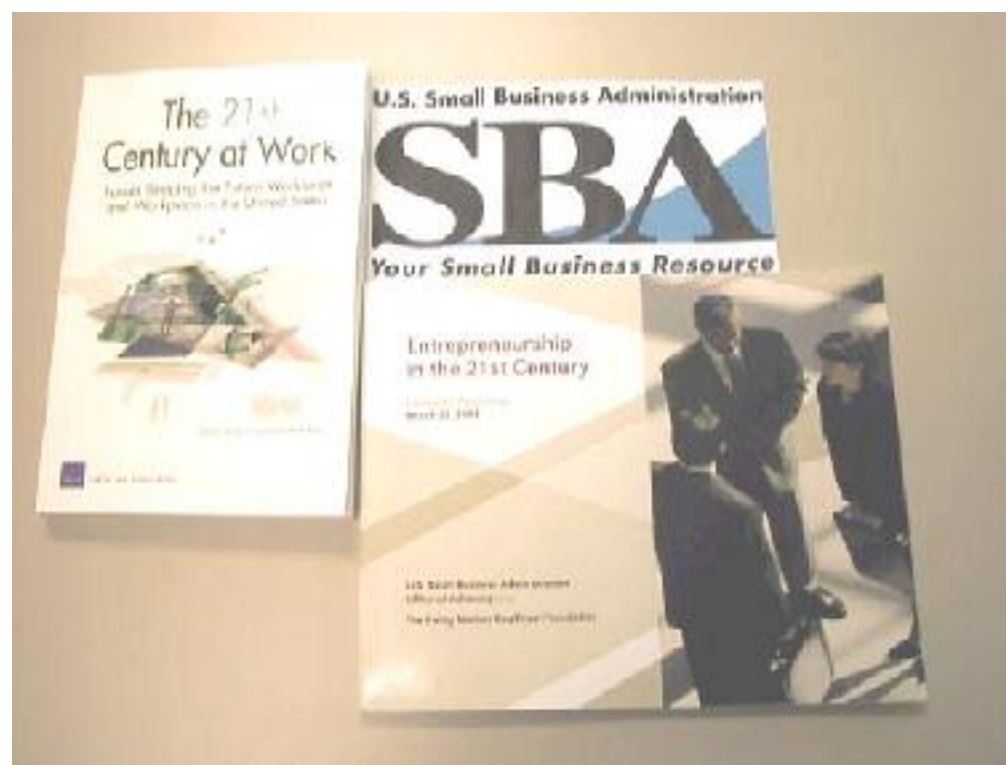


21st Century Jobs





Overview of the 21st Century Workforce & Entrepreneurship

for Region V

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Small Business Impact

- Half of U.S. non-farm income
- Half of U.S. private work force
- 60%-80% of net new jobs
- Small patent firms generate scientifically important innovations at a 13 to 14 times higher rate per employee, than large firms



Methodology of the Overview

- RAND study: “The 21st Century at Work”,
© February 2004 RAND corporation
- SBA conference: “Entrepreneurship in the 21st Century” March 26th 2004, U.S. Small Business Administration Office of Advocacy and the Ewing Marion Kauffman Foundation
- Research institutions:
 - Cleveland Federal Reserve Bank, Kansas City Federal Reserve Bank
 - CASE Western Reserve University, University of Illinois, Loyola University Chicago
 - U.S. Census Bureau, Bureau of Economic Analysis, and others

Region V



Region V Overview

- 51 Million people
- 6 states
- 525 counties
- 328,000 square miles
- 330 rural counties
- GSP of \$ 1.7 trillion
- 12 Senators, 76 members of the House of Representatives

21st century jobs

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The Past

Region V as viewed by the economic historian

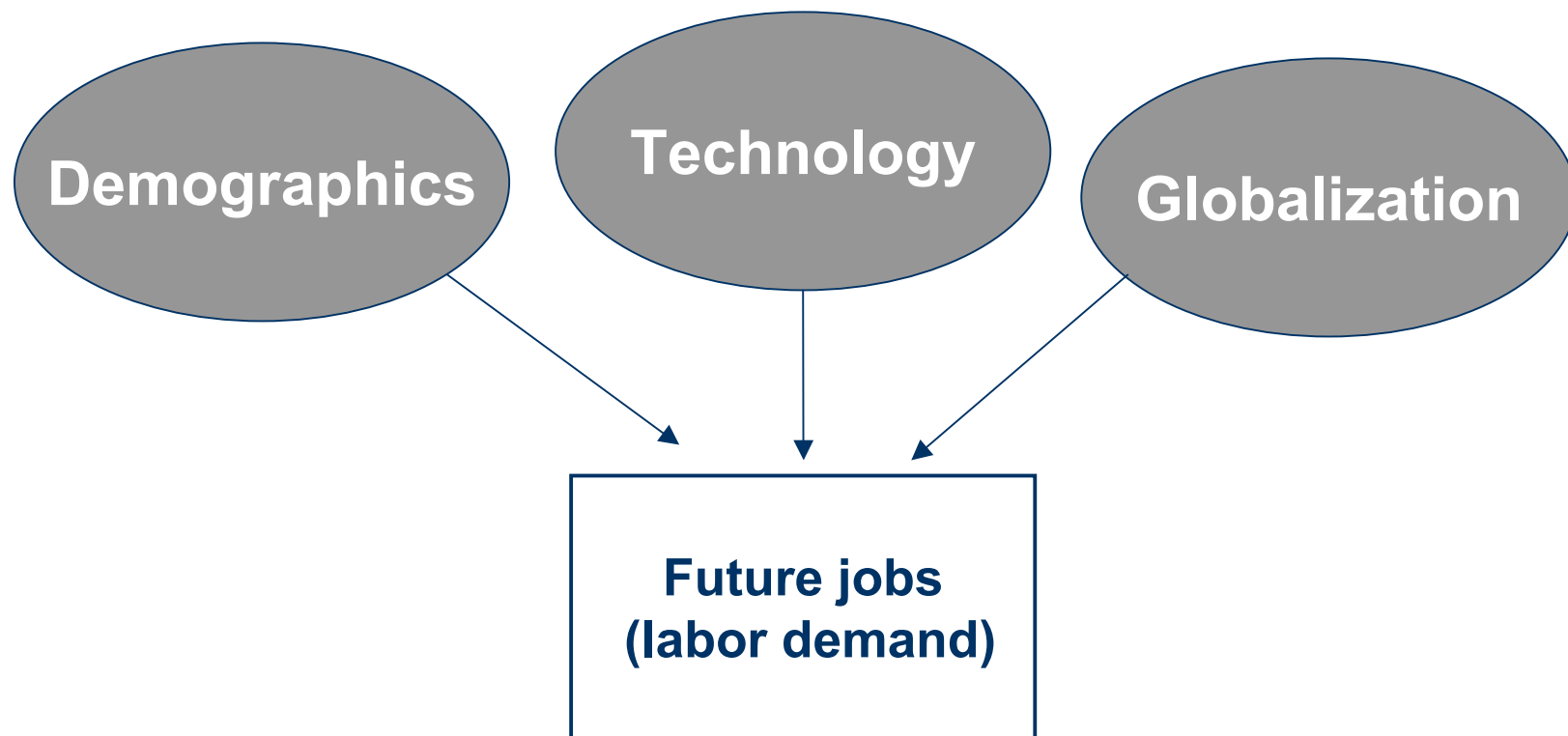
- Confluence of:
 - Industrial Revolution
 - Westward expansion
 - Around 1800.
- ~DeKaser, Chief Economist for National City.

National Factors for Economic Growth

Alan Greenspan,
Chairman U.S. Federal Reserve Bank:

- A nation's knowledge and skill
- Ability to control natural resources ★
- Quality of a nation's legal system ★
- A nation's openness to international trade ★

Forces affecting the 21st century workforce in the U.S.



Demographic Trends

- Slower population growth
- Increasing workforce at a decreasing rate
- Importance of worker skill
- Demographics will shift the demand for Trade & Service

Future labor force supply

- Slower workforce growth ahead
- Imbalance in education system:
 - Too many low skilled workers, too few high skilled workers (Prof. Ed Morrison, CASE Western Reserve University)

Future Knowledge Based Skills

- Strong non-routine cognitive ability
- Abstract reasoning
- Problem-solving
- Communication
- Collaboration

Role of Immigration

- U.S. projected to be the only developed country that experiences material growth until 2050
- 40% of U.S. population growth through immigration
- Brain-drain: highly skilled workers/researchers attracted by the U.S.

Frankfurter Allgemeine

ZEITUNG FÜR DEUTSCHLAND

Aug 20th 2004

- 1 in 7 doctorates from Germany move to the U.S. 30% stay there
- Foreign academics, top 3 nations: China – Japan – Germany (20,000 researchers)
- 3 of 4 German Nobel Price winners work in the U.S.
- 50% of all U.S. based research results come from foreign researchers
- 50% of U.S. masters and doctors candidates are foreigners.
- 500k foreign students registered in U.S. universities

World Population Projections

| | <u>2004</u> | <u>2050</u> |
|----------------|-------------|-------------|
| United States | 293.6 | 419.9 |
| Russia | 144.1 | 119.1 |
| Japan | 127.6 | 100.6 |
| Germany | 82.6 | 75.1 |
| United Kingdom | 59.7 | 65.4 |
| France | 60.0 | 64.0 |
| India | 1,086.6 | 1,628.0 |
| China | 1,300.1 | 1,437.0 |

Technology Trends

- Rapid Advance in IT
- Other dominant new technologies:
 - Biotechnology
 - Nanotechnology
- Organizational Change driven by technology
 - Vertical disintegration
 - Decentralization – power down
 - Lifelong learning

21st Century Business



Corporate Structure Change

- Vertical disintegration
- Outsourcing
- Intellectual capital

21st Century workers

Alvin Toffler, Futurist & Author:

- “The illiterate of the 21st Century will not be those who cannot read or write, but those who cannot learn, unlearn and relearn.”

Globalization Trends

- Increased trade: 10% of GDP in 1960, 25% now
- Forces of Globalization
 - Declining transportation and communication cost
 - IT -> global coordination
 - World wide trade agreements
- The U.S. must find its competitive economic strength:
 - High-tech & Intellectual Property

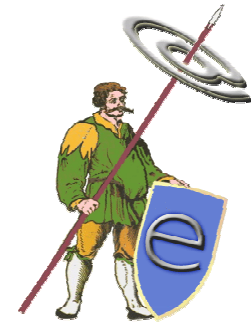
21st Century Challenges

E-Lance



Prof. Thomas Malone, MIT

Harvard Business Review, May 1998



E-Lancers

- Google lists 528,000 entries for “e-lance”
- e-lance.com, e-lancer.com, guru.com
- Marketplaces similar to eBay, Companies post projects and professionals bid for them
- Marketplace providers charge percentage of volume as service-fee

E-Lancer Marketplaces

The screenshot displays the ElanceOnline website, a platform for finding freelance talent. The header includes the 'xguru' logo and navigation links for Home, Freelance Jobs, Freelance Talent, Jobs, and Register. A sidebar on the left lists categories like Web Design, Writing, and Marketing. The main content area features a large banner for 'ElanceOnline' with the tagline 'Sell Your Expertise in the World's Largest Services Marketplace'. Below the banner, there are sections for 'Quick Facts' (listing 100,000+ potential buyers, 100,000+ jobs, and awards) and 'Open Projects' (listing various service categories). A 'Get Started Now' button is prominently displayed. The right sidebar contains links for 'Live Help', 'New to ElanceOnline?', 'What's New', and 'FAQs'.

21st century jobs

21st Century

Consensus Projections Region V

- “Growth will continue but at a slower rate than in the United States, because...”
 - Traditional industries will continue to shrink
 - Workforce is trained for yesterdays jobs
 - High cost for labor & materials
 - Rural economy is tied to extraction Industries
 - Lower than average immigration
 - Aging population
 - Lack of focus in education system

Prescriptions for the 21st century

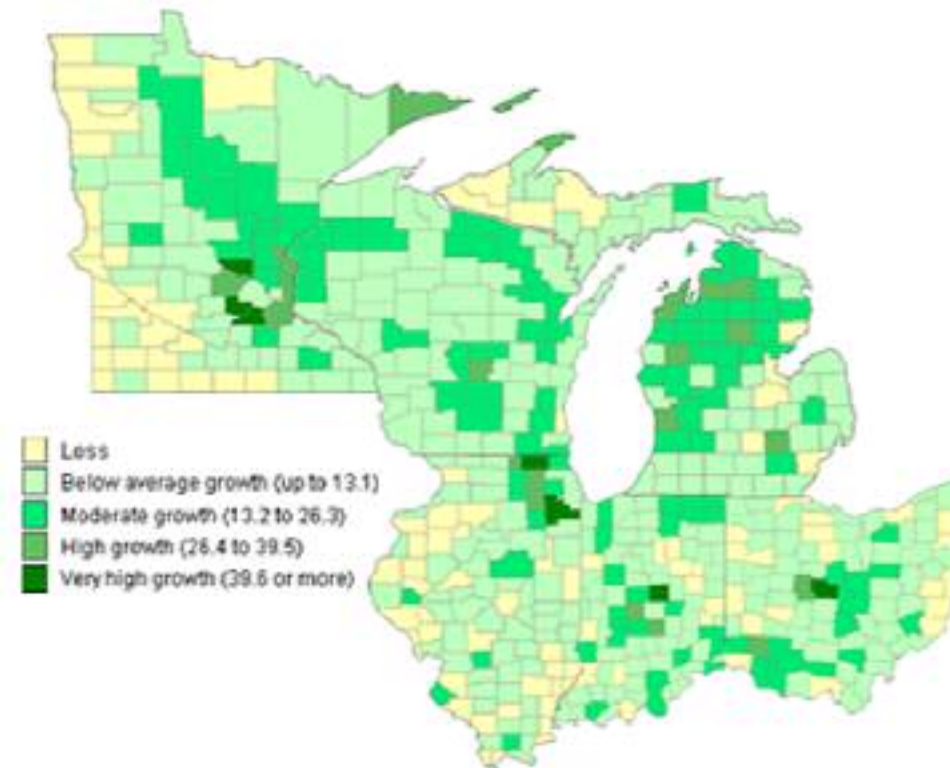
Sandra Pianalto, President & CEO Federal Reserve Bank of Cleveland - March 5, 2004 City Club Cleveland:

- Manufacturing can remain a strong base
- We must invest in our most important asset – our people
- We must accept that economic change is inevitable

Assumptions for Region V

- Location remains a strength
- Skilled workforce
- Excellent transportation system
- Innovative states, cities and private sector
- Strong/historic industrial sector
- Diverse business portfolio
- Key idea/startup locations

Special Region 5 considerations - Rural Region V -



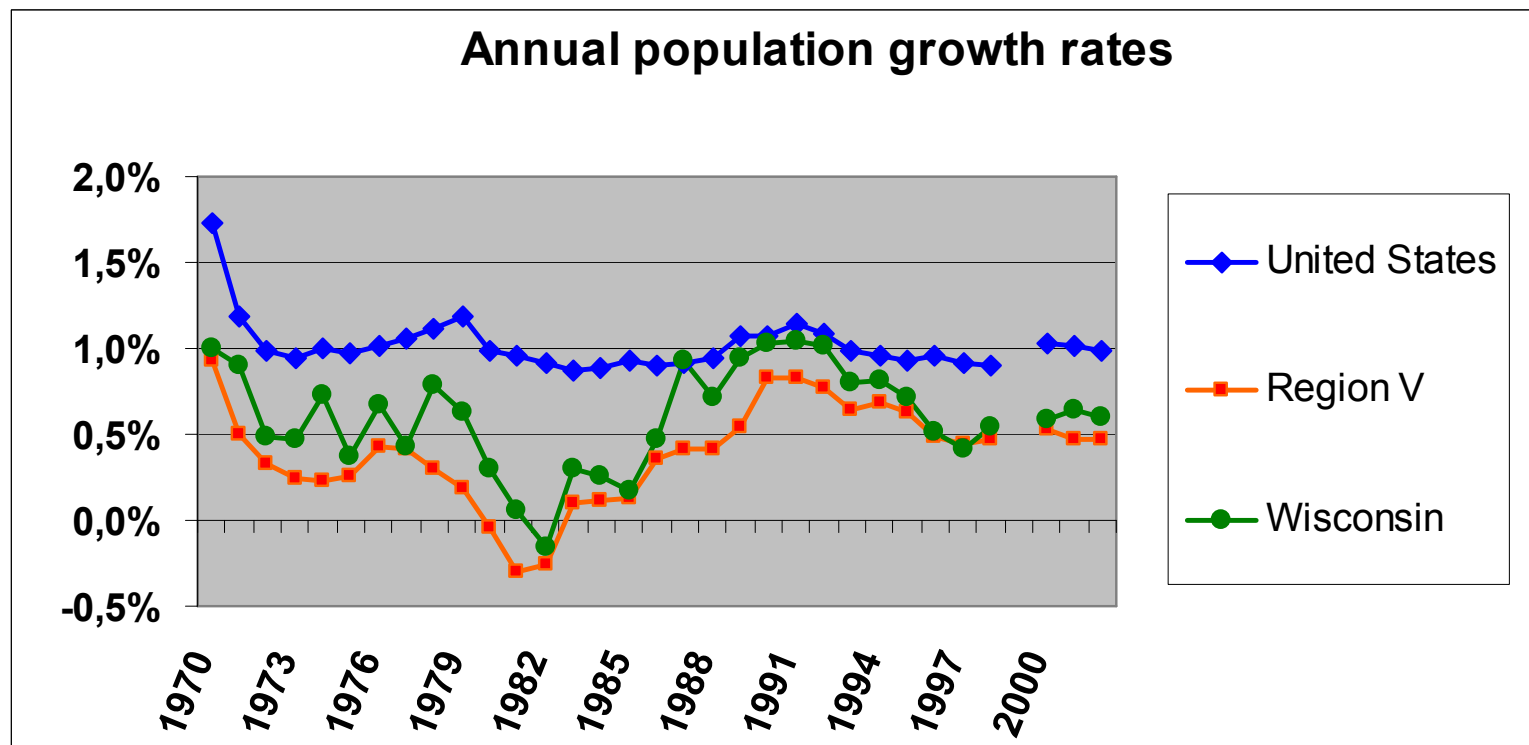
Special Region 5 considerations - Rural Region V -

- Population trends
- Growth counties:
 - Recreation counties
 - Lakes - river - corridor counties
 - Counties near metropolitan areas
 - Micro-metro counties

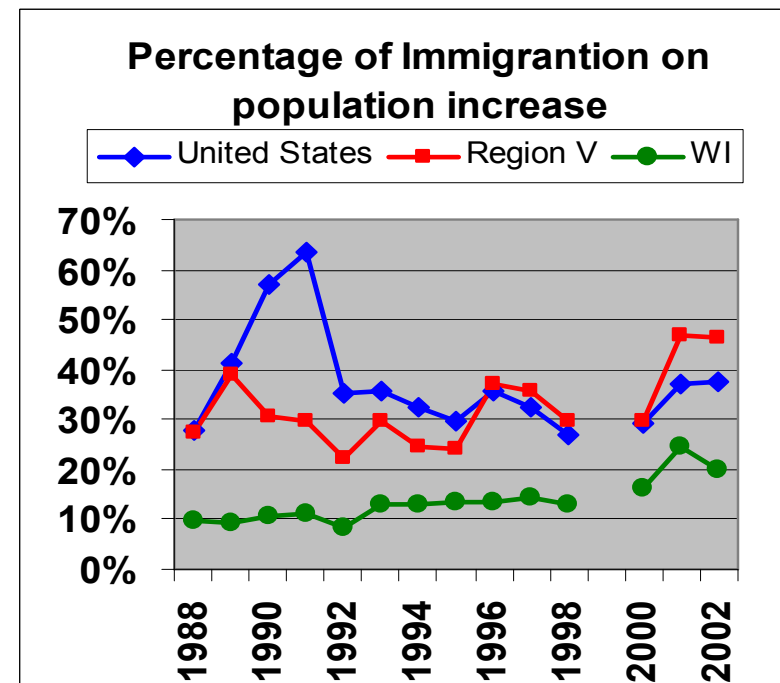
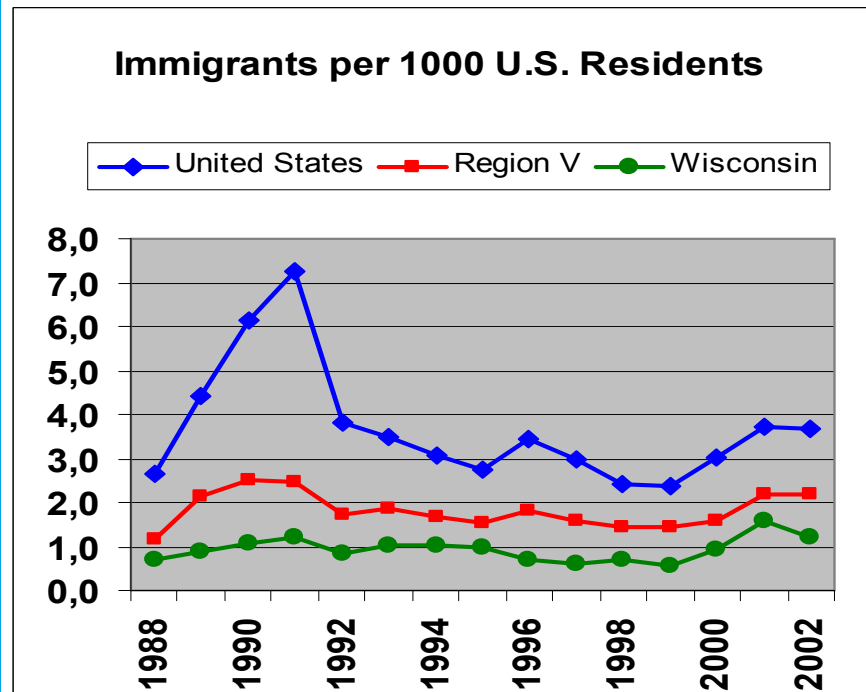
Requirements for rural economic development

- Feeder roads
- Modern water system
- Stable power source
- Modern IT Systems
 - Extension of fiber optics
- Modern educational system

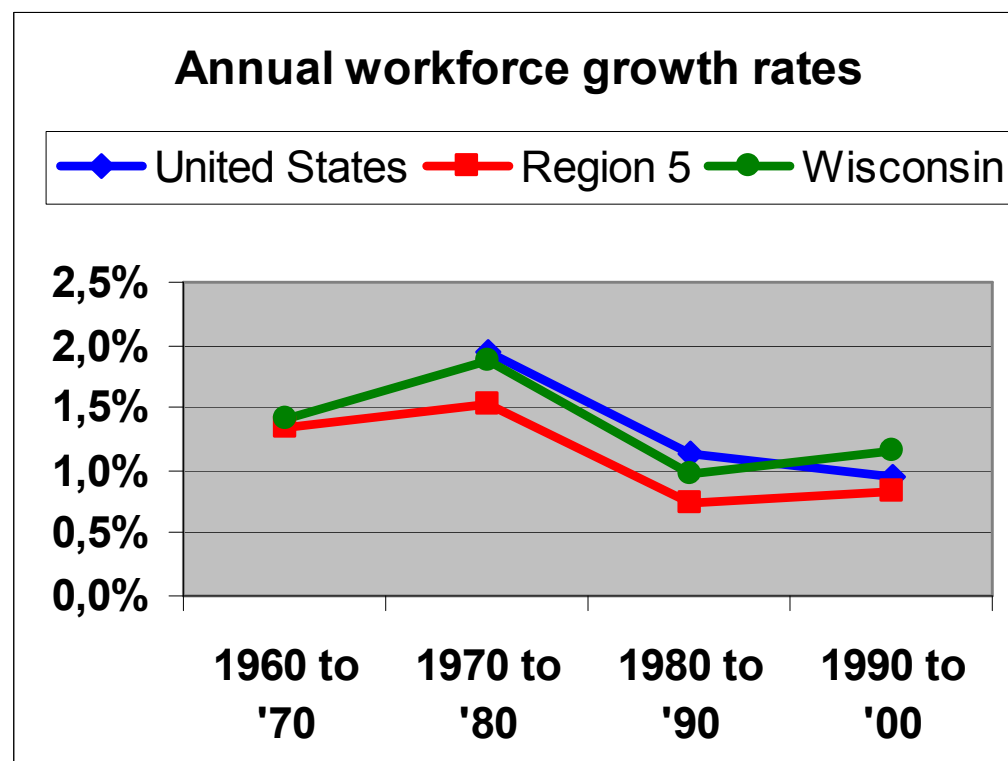
Region V - Demographic Challenges -



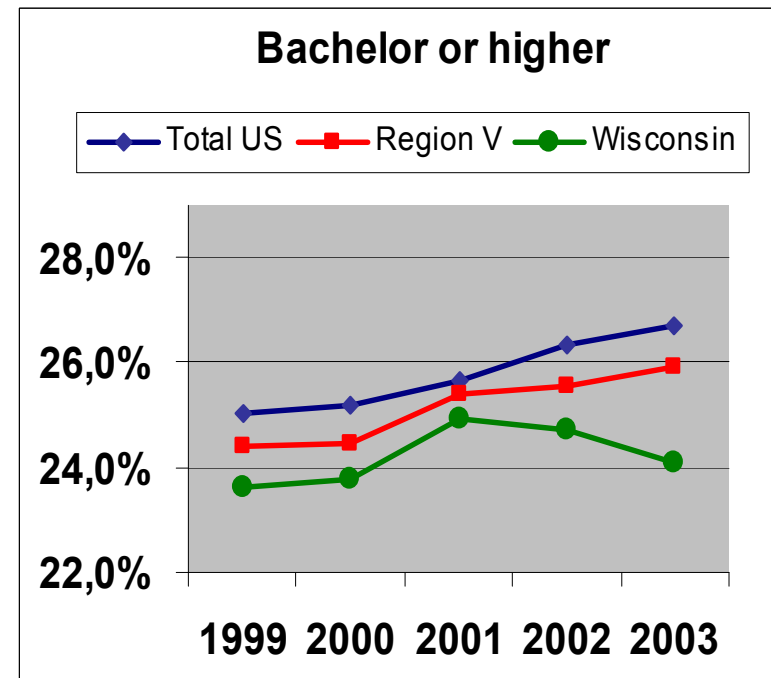
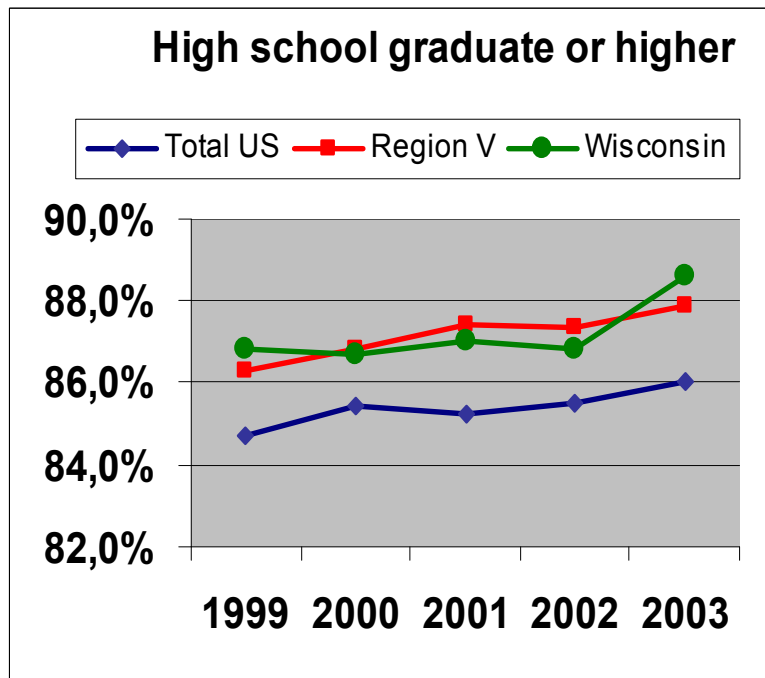
Dependency on Immigration



Labor Force



Region V – Educational Challenges -



Region V - cluster formation -

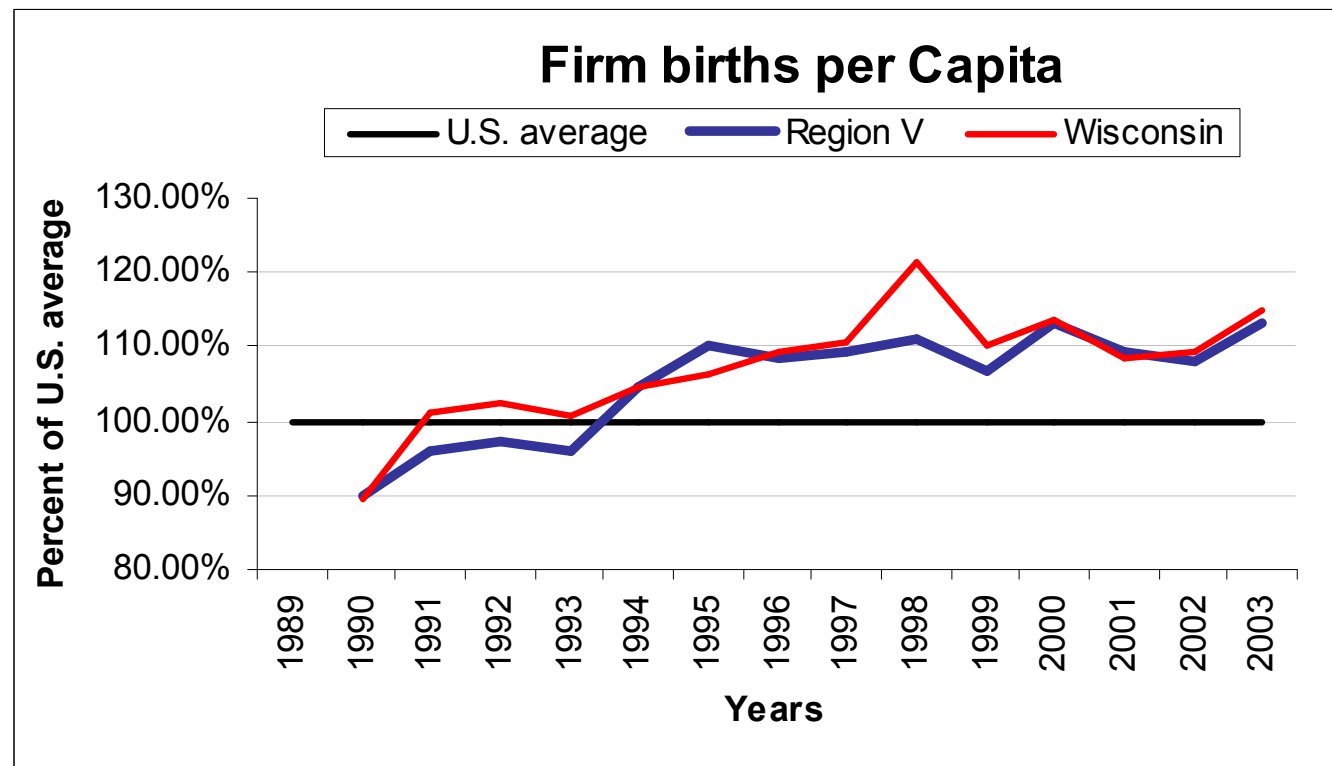
- Two types of cluster formation forces:
 - natural advantages
 - spillovers
 - physical spillovers (e.g. lower transportation costs)
 - intellectual spillovers (e.g. shared consultants, ex-employees)
- These forces can be measured by the Agglomeration Coefficient (Ellison, Glaeser 1997)

Region V - cluster formation -

| Name | LQ | Agglomeration Coefficient | Employment change % |
|--------------------------------------|------|---------------------------|---------------------|
| Primary metal industries | 1.97 | medium | -11.97% |
| Apparel and other textile products | 0.41 | low | -9.53% |
| Petroleum and coal products | 0.91 | high | -7.23% |
| Transportation equipment | 1.86 | high | -5.33% |
| Electrical and electronic equipment | 1.10 | medium | -4.70% |
| Industrial machinery and equipment | 1.69 | low | -3.95% |
| Printing and publishing | 1.22 | low | -3.91% |
| Electric, gas, and sanitary services | 0.99 | low | -1.90% |
| Fabricated metal products | 1.83 | low | -1.43% |
| Food and kindred products | 1.06 | medium | -1.41% |

Special Region 5 considerations

- Entrepreneurship -



Special Region 5 considerations

- Post-Secondary Educational Institutions -

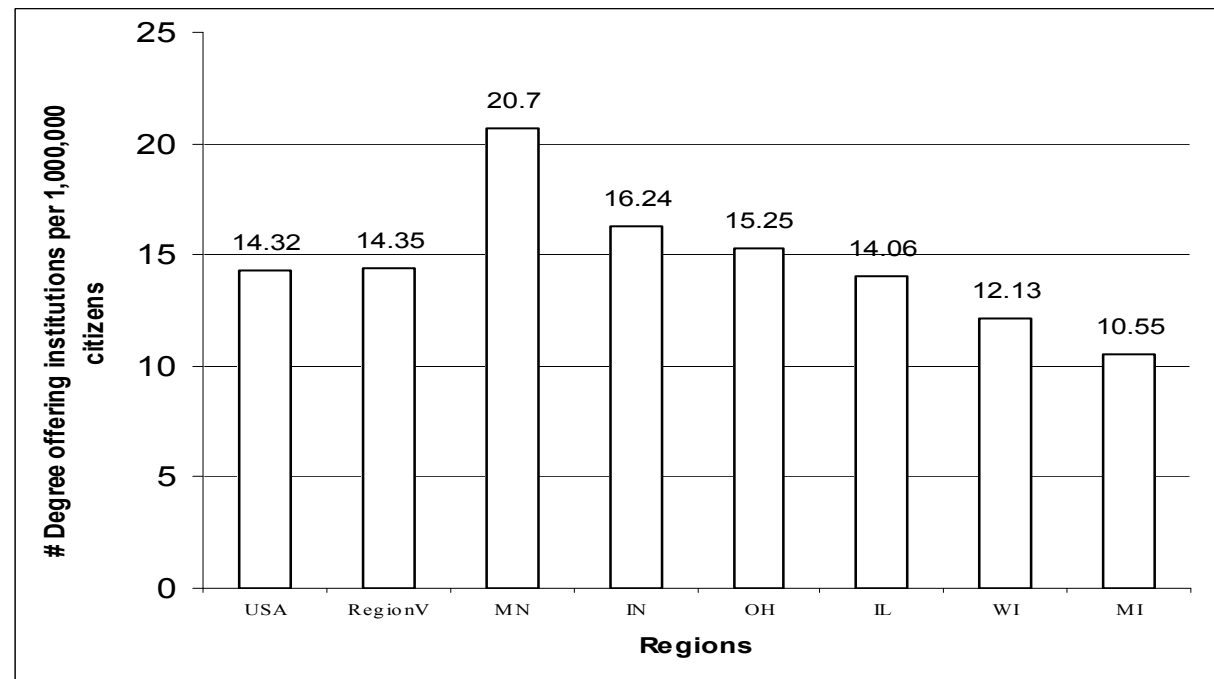
- Number of degree/certificate offering institutions:

| | USA | Region V | WI |
|-----------------------------------|--------------|--------------|-----------|
| Associate Degree | 2,767 | 485 | 38 |
| Bachelor Degree | 2,157 | 376 | 40 |
| Master Degree | 1,616 | 278 | 36 |
| Doctors Degree | 601 | 103 | 6 |
| Degrees total | 4,125 | 727 | 66 |
| Certificates | 2,299 | 365 | 19 |
| Degrees/certificates total | 6,424 | 1,092 | 85 |

Special Region 5 considerations

- Post-Secondary Educational Institutions -

- degree offering institutions per 1,000,000 citizens:



Special Region 5 considerations

- Research Universities -

- Research Universities have strong regional economic impact
- Drivers for economic impact:
 - Industrial funding
 - High gross license income received
 - High number of licenses generating income
 - High number of exclusive licenses
 - Strong research funding related to licenses
 - Many licenses executed with equity
 - Many startups formed
 - High number of full time employees in Technology Transfer Office
 - Good general university quality

Special Region 5 considerations

- Research Universities -

Top 10 Research Universities ranked by regional economic impact:

| State | University | total rank |
|-----------|---|------------|
| Illinois | University of Illinois, Chicago, Urbana Champaign | 1 |
| Minnesota | University of Minnesota | 1 |
| Michigan | University of Michigan | 3 |
| Wisconsin | University of Wisconsin, Madison | 4 |
| Illinois | Northwestern University | 5 |
| Illinois | University of Chicago | 6 |
| Ohio | Cleveland Clinic Foundation | 6 |
| Ohio | Ohio State University | 8 |
| Indiana | Indiana University | 9 |
| Michigan | Michigan State University | 10 |

Long-term job projections

- industries with highest number of job gains in Region V:

| Name | 2000 | 2010 | change | change % |
|-------------------------------------|-----------|-----------|---------|----------|
| Business services | 1,669,920 | 2,335,173 | 665,253 | 39.84% |
| Health services | 2,115,084 | 2,522,375 | 407,291 | 19.26% |
| Eating and drinking places | 1,556,747 | 1,790,954 | 234,207 | 15.04% |
| Educational services | 1,870,516 | 2,086,513 | 215,997 | 11.55% |
| Social services | 519,489 | 674,663 | 155,174 | 29.87% |
| Engineering and management services | 561,075 | 713,850 | 152,775 | 27.23% |
| Miscellaneous retail | 630,911 | 742,154 | 111,243 | 17.63% |
| Special trade contractors | 745,858 | 850,048 | 104,190 | 13.97% |
| Amusement and recreational services | 323,458 | 406,880 | 83,422 | 25.79% |
| Wholesale trade--durable goods | 847,558 | 913,855 | 66,297 | 7.82% |

Long-term job projections

- industries with highest number of job gains in Wisconsin:

| Title | 2000 | 2010 | change | change % |
|-------------------------------------|---------|---------|--------|----------|
| Health services | 233,240 | 287,930 | 54,690 | 23.45% |
| Business services | 152,990 | 181,300 | 28,310 | 18.50% |
| Educational services | 245,780 | 270,350 | 24,570 | 10.00% |
| Eating and drinking places | 173,380 | 197,940 | 24,560 | 14.17% |
| Social services | 76,420 | 100,500 | 24,080 | 31.51% |
| Membership organizations | 74,740 | 86,860 | 12,120 | 16.22% |
| Engineering and management services | 40,650 | 52,750 | 12,100 | 29.77% |
| Miscellaneous retail | 73,760 | 85,760 | 12,000 | 16.27% |
| Amusement and recreational services | 31,070 | 42,790 | 11,720 | 37.72% |
| Special trade contractors | 81,110 | 88,850 | 7,740 | 9.54% |

Projected Economic Development Strengths of Region V

- Historic location
- Strong industrial base
 - Agglomeration Theory
 - Cluster
- Growing networks
- Excellent base of research universities
- Above average new firm-births
- An awakening to the challenge

Questions?

